

REMARKS

Claims 1-8, 10-13, 15, 17, 18, 20 and 21 were pending in the present application. New claim 22 is added herein. Thus, claims 1-8, 10-13, 15, 17, 18, 20-22 are now pending. The applicants respectfully request reconsideration and allowance of the present application in view of the above amendments and the following remarks.

The claims are objected to as failing to define vertical and horizontal axes with respect to the spark plug. Applicants submit that the amendments herein clearly define a longitudinal axis with regard to a center line of the center electrode and additional references are made with respect thereto thus addressing the objection.

Claims 1, 2, 15, and 17 stand rejected under 35 USC §102(b) as being allegedly anticipated by Johnson, U.S. Patent No. 5,430,346. The rejection is respectfully traversed.

With regard to independent claim 1, as amended, the claimed structure is now recited to more clearly distinguish over Johnson by clarifying that the ground electrode has a second tip end facing the one of a first tip end and an outer peripheral surface of the center electrode to define a spark gap therebetween, substantially along a longitudinal center line of the center electrode, if the one includes the first tip end, and wherein the ground electrode has the second tip end facing the one, substantially along a line extending perpendicular to the longitudinal center line of said center electrode, if the one includes said outer peripheral surface.

Applicants first note that in view of the expense associated with filing the Request for Continued Examination, in the spirit of the RCE, and in view of the Examiner's note in the Advisory Action mailed April 5, 2005 that the amendment filed March 11, 2005, would not be entered because the amendment to claim 1 requires further consideration and/or search, Applicants request to know with greater specificity the reasons for continued rejection of the claims, not just with regard to the amended features of claim 1, but with regard to the detailed

arguments presented for example in the amendment of March 11, 2005. For example, since Johnson shows a ring shaped ground electrode, the examiner is respectfully requested to identify exactly what feature of Johnson is alleged to amount to the “tip end” of the ground electrode. At best, Johnson shows a discontinuity 36, which, if alleged to amount to the claimed tip end, is clearly not in axial alignment. However, claim 1 is amended herein such that the relationship between the tip end of the center electrode and the tip end of the ground electrode are more clearly recited.

Johnson is alleged to disclose on col 2 line 6-14, the previously claimed axial alignment between the ground electrode and the tip end of the center electrode made in the March 11, 2005 amendment. In considering the amendment to claim 1 made herein however, claim 1 now recites that the ground electrode has a second tip end *facing* the one of a first tip of the center electrode or an outer peripheral surface thereof, *substantially along a longitudinal center line of said center electrode*, if the one includes the first tip. A review of the cited section, e.g. col 2, line 6-14 reveals only that the outer shape of the “ring shaped” electrode need not be round, but can be another geometric configuration provided it has an *open inner annular* uniform circumference. It is important to note however that Johnson specifies that the diameter of the open inner annular circumference is preferably *larger* than the diameter of the center electrode (col 2, line 26, 27).

Thus, even if a tip of the ground electrode could be identified in Johnson corresponding to the claimed second tip, and assuming *arguendo* that a bottom surface of the ring shaped ground electrode could amount to such a tip (which applicants vigorously contend it could not and does not) it would be physically impossible for the bottom surface of the ring shaped electrode to face the tip of the center electrode substantially along a longitudinal center line thereof since the electrode is specifically taught to be open in this area. At best, again assuming, *arguendo*, that the bottom surface of the ring shaped ground electrode could amount to the

claimed second tip, only an edge of the ground electrode could be near to facing the center electrode, but only if the diameter of the inner annular opening were significantly smaller than the diameter of the center electrode. Even then, it would still not face *substantially along a longitudinal center* unless, perhaps, the inner annular opening were completely eliminated.

Johnson however specifically limits the size of the inner annular opening to no less than 80% of the diameter of the center electrode (col 2, line 10) teaching away from such a scenario. And again, applicants contend that the ring shaped ground electrode is not configured with a tip as claimed and is therefore deficient in other regards.

For example, a close review of Johnson fails to produce a description or illustration of a ground electrode extending horizontally from a metal shell. All figures are directed toward a ground electrode *which is vertically spaced* using posts 38. Thus, even if the ground electrode 12 extends horizontally, it does not extend horizontally from the metal shell 26 in a manner as claimed. Rather, at best, ground electrode 12 extends horizontally only from the posts 38. It is important to note that the feature of claim 21, e.g. the claimed L shape has been used to characterize Johnson in its application against claim 1. Applicants believe such an application to be improper and, notwithstanding, further supports the contention that Johnson fails to disclose or teach the claimed configuration of the ground electrode. At best, as is clearly shown, for example, in Fig. 26 of Johnson, an outer peripheral surface (bottom surface 58) of a center electrode opposes a post 38 and thus does not oppose, in the manner claimed, a second tip of a ground electrode, does not define a spark gap, and does not face substantially along a line extending perpendicular to the longitudinal center line of the center electrode.

Accordingly a *prima facie* case of anticipation has not been established and cannot be sustained in that Johnson fails to identically disclose all the features in the manner claimed as

required. It is respectfully requested therefore that the rejection of independent claim 1 be reconsidered and withdrawn.

Claims 2 and 15, by virtue of depending from claim 1, are believed allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claims 2 and 15 be reconsidered and withdrawn.

Claim 3 stands rejected under 35 U.S.C. 103 (a) as being allegedly unpatentable over Johnson. By virtue of depending from claim 1, claim 3 is allowable for at least the reasons set forth herein above. The rejection of claim 3 should therefore be withdrawn.

Claims 4, 5, 11, and 12 stand rejected under 35 U.S.C. 103 (a) as being allegedly unpatentable over Johnson in view of Takafumi et al JP 63-266046. The rejection is respectfully traversed.

By virtue of depending from claim 1, claims 4, 5, 11, and 12 are allowable for at least the reasons set forth herein above. The rejection of claims 4, 5, 11, and 12 should therefore be withdrawn.

Claims 7, 8, 10, 13, 18, 20, and 21 stand rejected under 35 U.S.C. 103 (a) as being allegedly unpatentable over Johnson in view of Franks U.S. Patent No. 3,958,144. By virtue of depending from claim 1, claims 7, 8, 10, 13, 18, 20, and 21 are allowable for at least the reasons set forth herein above. The rejection of claims 7, 8, 10, 13, 18, 20, and 21 should therefore be withdrawn.

Claims 1 and 6 stand rejected under 35 U.S.C. 103 (a) as being allegedly unpatentable over Pfeil, U.S. Patent No. 2,406,966 in view of Johnson. The rejection is respectfully traversed.

With regard to claim 1, as amended as noted above, the claimed structure is not recited in Pfeil and thus in the applied art combination. In particular, Pfeil, as admitted by the Examiner,

and thus the applied art combination fail to teach or suggest, for example, laser spot welding of the ground electrode.

Johnson, and thus the applied art combination, fails to teach or suggest the structure of claim 1, as amended, for the reasons set forth herein above. As noted above, applicants, in the spirit of continued examination under the RCE, are entitled to a response to the lengthy arguments provided in the response filed March 11, 2005 and herein.

Applicants again vigorously contend that the combination of Pfeil and Johnson is improperly motivated in that the Examiner has provided no evidence to show that one of ordinary skill in the art would have been motivated to combine Pfeil with Johnson. Applicants are entitled to know specifically what evidence is being used to support the combination of references.

As noted however, even if the art combination is properly motivated, which applicants again vigorously contend it is not, it still fails to teach or suggest all the features of the claimed invention as required. Accordingly a *prima facie* case of obviousness has not been established in that the applied art combination is improperly motivated and nevertheless still fails to teach or suggest all the claimed features as required. It is respectfully requested therefore that the rejection of claim 1 be reconsidered and withdrawn.

Claim 6, by virtue of depending from claim 1, is believed allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claim 6 be reconsidered and withdrawn.

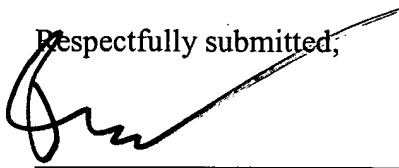
New claim 22, by virtue of depending from claim 1 is believed allowable for at least the reasons set forth herein with regard to claim 1. Further by reciting the feature that the ground electrode extends *directly* from said metal shell in a direction perpendicular to the longitudinal center line of said center electrode, independently and more clearly distinguishes over the art.

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In view of the foregoing, the applicants respectfully submit that the present application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

Please charge any unforeseen fees that may be due to Deposit Account No. 50-1147.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Robert L. Scott, II', written over a horizontal line.

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